

IN THE CLAIMS:

Please cancel claims 36-41 without prejudice or disclaimer to the subject matter therein, and add new claims 42-47 as follows.

1-41 (Canceled)

42. (New) A signal transmission and receiving apparatus for transmitting and receiving a PSK or QAM modulated signal having information of a first data stream and a second data stream, the apparatus comprising a transmission apparatus and a receiving apparatus,

said transmission apparatus comprising:

- a Reed-Solomon encoder operable to Reed-Solomon encode the second data stream to produce a Reed-Solomon encoded data stream;

- a modulator operable to modulate the first data stream, without being Reed-Solomon encoded, to an m-level PSK or QAM modulated signal and modulate the Reed-Solomon encoded data stream to an n-level PSK or QAM modulated signal;

wherein the first data stream has data for demodulating the second data stream; and

- a transmitter operable to transmit the m-level PSK or QAM modulated signal and the n-level PSK or QAM modulated signal;

said receiving apparatus comprising:

- a demodulator operable to demodulate the m-level PSK or QAM modulated signal to the first data stream and demodulate the n-level PSK or QAM modulated signal to a demodulated data stream,

wherein the demodulated data stream is reproduced according to the data for demodulating the second data stream; and

- a Reed-Solomon decoder operable to Reed-Solomon decode the demodulated data stream to the second data stream.

43. (New) A signal transmission apparatus for transmitting a PSK or QAM modulated signal having information of a first data stream and a second data stream, the apparatus comprising:

- a Reed-Solomon encoder operable to Reed-Solomon encode the second data stream to produce a Reed-Solomon encoded data stream;
- a modulator operable to modulate the first data stream, without being Reed-Solomon encoded, to an m-level PSK or QAM modulated signal and modulate the Reed-Solomon encoded data stream to an n-level PSK or QAM modulated signal;
wherein the first data stream has data for demodulating the second data stream; and
- a transmitter operable to transmit the m-level PSK or QAM modulated signal and the n-level PSK or QAM modulated signal.

44. (New) A signal receiving apparatus comprising:

- a receiver operable to receive a transmitted PSK or QAM modulated signal,
wherein said transmitted PSK or QAM modulated signal includes an m-level PSK or QAM modulated signal and an n-level PSK or QAM modulated signal;
- a demodulator operable to demodulate the m-level PSK or QAM modulated signal to a first data stream having data for demodulating a Reed-Solomon encoded data stream and demodulate the n-level PSK or QAM modulated signal to a demodulated data stream, wherein the first data stream is not Reed-Solomon encoded and the demodulated data stream is Reed-Solomon encoded,
wherein the demodulated data stream is reproduced according to the data for demodulating the second data stream; and
- a Reed-Solomon decoder operable to Reed-Solomon decode the demodulated data stream to a second data stream.

45. (New) A signal transmission and receiving method for transmitting and receiving a PSK or QAM modulated signal having information of a first data stream and a second data stream, the method comprising a transmission method and a receiving method,

said transmission method comprising:

- Reed-Solomon encoding the second data stream to produce a Reed-Solomon encoded data stream;

- modulating the first data stream, without being Reed-Solomon encoded, to an m-level PSK or QAM modulated signal and modulating the Reed-Solomon encoded data stream to an n-level PSK OR QAM modulated signal;

wherein the first data stream has data for demodulating the second data stream; and

- transmitting the m-level PSK or QAM modulated signal and the n-level PSK or QAM modulated signal;

said receiving method comprising:

- demodulating the m-level PSK or QAM modulated signal to the first data stream and demodulating the n-level PSK or QAM modulated signal to a demodulated data stream;

wherein the demodulated data stream is reproduced according to the data for demodulating the second data stream; and

- Reed-Solomon decoding the demodulated data stream to the second data stream.

46. (New) A signal transmission method for transmitting a PSK or QAM modulated signal having information of a first data stream and a second data stream, the apparatus comprising:

- Reed-Solomon encoding the second data stream to produce a Reed-Solomon encoded data stream;

- modulating the first data stream, without being Reed-Solomon encoded, to an m-level PSK or QAM modulated signal and modulating the Reed-Solomon encoded data stream to an n-level PSK or QAM modulated signal;

wherein the first data stream has data for demodulating the second data stream; and

- transmitting the m-level PSK or QAM modulated signal and the n-level PSK or QAM modulated signal.

47. (New) A signal receiving method comprising:

- receiving a transmitted PSK or QAM modulated signal,
wherein said transmitted PSK or QAM modulated signal including an m-level PSK or QAM modulated signal and an n-level PSK or QAM modulated signal;
- demodulating the m-level PSK or QAM modulated signal to a first data stream having data for demodulating the second data stream and demodulating the n-level PSK or QAM modulated signal to a demodulated data stream, wherein the first data stream is not Reed-Solomon encoded and the demodulated data stream is Reed-Solomon encoded,
wherein the demodulated data stream is reproduced according to the data for demodulating the second data stream; and
- Reed-Solomon decoding the demodulated data stream to a second data stream.